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For Petitioner California Sportfishing Protection Alliance

**BEFORE THE STATE WATER RESOURCES CONTROL BOARD**

<b>In the Matter of Waste Discharge Requirements For</b>	)	
<b>California Department of General Services Central</b>	)	<b>PETITION FOR REVIEW</b>
<b>Heating Operations, Heating and Cooling Facility;</b>	)	
<b>California Regional Water Quality Control Board –</b>	)	
<b>Central Valley Region Resolution No. R5-2008-0186;</b>	)	
<b>NPDES No. CA0078581</b>	)	

**PETITION FOR REVIEW**

Pursuant to Section 13320 of California Water Code and Section 2050 of Title 23 of the California Code of Regulations (CCR), California Sportfishing Protection Alliance (“CSPA” or “petitioner”) petitions the State Water Resources Control Board (State Board) to review and vacate the final decision of the California Regional Water Quality Control Board for the Central Valley Region (“Regional Board”) in adopting Waste

Discharge Requirements (NPDES No. CA0078581) for California Department of General Services Central Heating Operations, Heating and Cooling Facility Wastewater Treatment Plant, on 5 December 2008. See Resolution No. R5-2008-0186. The issues raised in this petition were raised in timely oral comments at the Regional Board hearing for this matter.

**1. NAME AND ADDRESS OF THE PETITIONERS:**

California Sportfishing Protection Alliance  
3536 Rainier Avenue  
Stockton, California 95204  
Attention: Bill Jennings, Executive Director

**2. THE SPECIFIC ACTION OR INACTION OF THE REGIONAL BOARD WHICH THE STATE BOARD IS REQUESTED TO REVIEW AND A COPY OF ANY ORDER OR RESOLUTION OF THE REGIONAL BOARD WHICH IS REFERRED TO IN THE PETITION:**

Petitioner seeks review of Resolution No. R5-2008-0186, amending Waste Discharge Requirements (NPDES No. CA0078581) for the California Department of General Services Central Heating Operations, Heating and Cooling Facility. The Regional Board has not yet posted/issued a copy of the final Resolution on its website. A copy of the draft Resolution is attached as Attachment No. 1. Petitioner will forward a copy of the final Resolution when it is made available.

**3. THE DATE ON WHICH THE REGIONAL BOARD ACTED OR REFUSED TO ACT OR ON WHICH THE REGIONAL BOARD WAS REQUESTED TO ACT:**

5 December 2008

**4. A FULL AND COMPLETE STATEMENT OF THE REASONS THE ACTION OR FAILURE TO ACT WAS INAPPROPRIATE OR IMPROPER:**

CSPA submitted oral comments at the Regional Board hearing on 5 December 2008. That testimony and the following comments set forth in detail the reasons and points and authorities why CSPA believes the Order fails to comport with statutory and regulatory requirements. The specific reasons the adopted Orders are improper are:

- A. The Permit amendment contains an inadequate antidegradation analysis that does not comply with the requirements of Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR § 131.12, the State Board's Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247**

Actions that trigger use of the antidegradation policy include modification of NPDES permits. The Permit amendment relaxes an Effluent Limitation for electrical conductivity (EC), significantly relaxes the chronic toxicity monitoring trigger and allows a chronic aquatic life dilution credit. The Permit amendment contains only one unsubstantiated, undocumented, and conclusory sentence regarding relaxation of the EC Effluent Limitation in Finding No. 7. The Permit amendment does not discuss the Industrial Process Supply and Agricultural Irrigation beneficial uses with regard to relaxation of the EC limitation and the only statement regarding the Municipal and Domestic beneficial uses is that a water intake does not exist in the immediate vicinity of the discharge. The Permit amendment does not present information regarding the maximum level of EC that has been or is allowed to be discharged and only speaks of average concentrations. The Permit amendment does not discuss the impacts of the allowance for increased EC degradation of the Sacramento River or the Sacramento San Joaquin Delta. The allowance for an increased concentration and accompanying mass of a pollutant warrants a complete Antidegradation Policy analysis.

The Permit amendment modifies the chronic monitoring trigger from 1 TU<sub>c</sub> to 16 TU<sub>c</sub>s and does not discuss that the Sacramento River and the Sacramento San Joaquin Delta are impaired and 303(d) listed for unknown toxicity. The Permit amendment does not discuss the fact that the discharge was monitored to exceed the 1 TU<sub>c</sub> trigger and a toxicity reduction evaluation (TRE) was not conducted to identify the source of toxicity to an impaired water body. Tier 1 (40 CFR § 131.12(a)(1)) protections apply even to those waters already impacted by pollution and identified as impaired. In other words, already impaired waters cannot be further impaired. At the relaxed toxicity trigger a TRE will not be conducted and the unidentified toxic constituent will therefore also be granted dilution. None of this is addressed as is required in an Antidegradation Policy analysis.

The Permit amendment includes significantly modified language and an allowance for a chronic mixing zone. The allowance for a previously prohibited mixing zone results in areas within the receiving stream where water quality standards may be exceeded. The exceedance of water quality standards at any area within a water body warrants a complete Antidegradation Policy analysis.

CWC Sections 13146 and 13247 require that the Board in carrying out activities which affect water quality shall comply with state policy for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy. The State Board has adopted the Antidegradation Policy (Resolution 68-16), which the Regional Board has incorporated into its Basin Plan. The Regional Board is required by the CWC to comply with the Antidegradation Policy.

Section 101(a) of the Clean Water Act (CWA), the basis for the antidegradation policy, states that the objective of the Act is to "restore and maintain the chemical, biological and physical integrity of the nation's waters." Section 303(d)(4) of the CWA carries this further, referring explicitly to the need for states to satisfy the antidegradation regulations at 40 CFR § 131.12 before taking action to lower water quality. These regulations (40 CFR § 131.12(a)) describe the federal antidegradation policy and dictate that states must adopt both a policy at least as stringent as the federal policy as well as implementing procedures.

California's antidegradation policy is composed of both the federal antidegradation policy and the State Board's Resolution 68-16 (State Water Resources Control Board, Water Quality Order 86-17, p. 20 (1986) ("Order 86-17"); Memorandum from Chief Counsel William Attwater, SWRCB to Regional Board Executive Officers, "federal Antidegradation Policy," pp. 2, 18 (Oct. 7, 1987) ("State Antidegradation Guidance")). As a state policy, with inclusion in the Water Quality Control Plan (Basin Plan), the antidegradation policy is binding on all of the Regional Boards (Water Quality Order 86-17, pp. 17-18).

Implementation of the state's antidegradation policy is guided by the State Antidegradation Guidance, SWRCB Administrative Procedures Update 90-004, 2 July 1990 ("APU 90-004") and USEPA Region IX, "Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12" (3 June 1987) ("Region IX Guidance"), as well as Water Quality Order 86-17.

The Regional Board must apply the antidegradation policy whenever it takes an action that will lower water quality (State Antidegradation Guidance, pp. 3, 5, 18, and Region IX Guidance, p. 1). Application of the policy does not depend on whether the action will actually impair beneficial uses (State Antidegradation Guidance, p. 6). Actions that trigger use of the antidegradation policy include issuance, re-issuance, and modification of NPDES and Section 404 permits and waste discharge requirements, waiver of waste discharge requirements, issuance of variances, relocation of discharges, issuance of cleanup and abatement orders, increases in discharges due to industrial production and/or municipal growth and/or other sources, exceptions from otherwise applicable water quality objectives, etc. (State Antidegradation Guidance, pp. 7-10, Region IX Guidance, pp. 2-3). Both the state and federal policies apply to point and nonpoint source pollution (State Antidegradation Guidance p. 6, Region IX Guidance, p. 4).

The federal antidegradation regulations delineate three tiers of protection for waterbodies. Tier 1, described in 40 CFR § 131.12(a)(1), is the floor for protection of all waters of the United States (48 Fed. Reg. 51400, 51403 (8 Nov. 1983); Region IX Guidance, pp. 1-2; APU 90-004, pp. 11-12). It states that "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." Uses are "existing" if they were actually attained in the water body on or after November 28, 1975, or if the water quality is suitable to allow the use to occur, regardless of whether the use was actually designated (40 CFR

§ 131.3(e)). Tier 1 protections apply even to those waters already impacted by pollution and identified as impaired. In other words, already impaired waters cannot be further impaired.

Tier 2 waters are provided additional protections against unnecessary degradation in places where the levels of water quality are better than necessary to support existing uses. Tier 2 protections strictly prohibit degradation unless the state finds that a degrading activity is: 1) necessary to accommodate important economic or social development in the area, 2) water quality is adequate to protect and maintain existing beneficial uses and 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved (40 CFR § 131.12(a) (2)). Cost savings to a discharger alone, absent a demonstration by the project proponent as to how these savings are “necessary to accommodate important economic or social development in the area,” are not adequate justification for allowing reductions in water quality (Water Quality Order 86-17, p. 22; State Antidegradation Guidance, p. 13). If the waterbody passes this test and the degradation is allowed, degradation must not impair existing uses of the waterbody (48 Fed. Reg. 51403). Virtually all waterbodies in California may be Tier 2 waters since the state, like most states, applies the antidegradation policy on a parameter-by-parameter basis, rather than on a waterbody basis (APU 90-004, p. 4). Consequently, a request to discharge a particular chemical to a river, whose level of that chemical was better than the state standards, would trigger a Tier 2 antidegradation review even if the river was already impaired by other chemicals.

Tier 3 of the federal antidegradation policy states “[w]here high quality waters constitute an outstanding national resource, such as waters of national and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water shall be maintained and protected (40 CFR § 131.12(a)(3)). These Outstanding National Resource Waters (ONRW) are designated either because of their high quality or because they are important for another reason (48 Fed. Reg. 51403; State Antidegradation Guidance, p. 15). No degradation of water quality is allowed in these waters other than short-term, temporary changes (Id.). Accordingly, no new or increased discharges are allowed in either ONRW or tributaries to ONRW that would result in lower water quality in the ONRW (EPA Handbook, p. 4-10; State Antidegradation Guidance, p. 15). Existing antidegradation policy already dictates that if a waterbody “should be” an ONRW, or “if it can be argued that the waterbody in question deserves the same treatment [as a formally designated ONRW],” then it must be treated as such, regardless of formal designation (State Antidegradation Guidance, pp. 15-16; APU 90-004, p. 4). Thus the Regional Board is required in each antidegradation analysis to consider whether the waterbody at issue should be treated as an ONRW. It should be reiterated that waters cannot be excluded from consideration as an ONRW simply because they are already “impaired” by some constituents. By definition, waters may be “outstanding” not only because of pristine quality, but also because of recreational significance, ecological significance or other reasons (40 CFR § 131.12(a)(3)). Waters need not be “high quality” for every parameter to be an ONRW (APU 90-004, p. 4). For example, Lake

Tahoe is on the 303(d) list due to sediments/siltation and nutrients, and Mono Lake is listed for salinity/TDC/chlorides but both are listed as ONRW.

The State Board's APU 90-004 specifies guidance to the Regional Boards for implementing the state and federal antidegradation policies and guidance. The guidance establishes a two-tiered process for addressing these policies and sets forth two levels of analysis: a simple analysis and a complete analysis. A simple analysis may be employed where a Regional Board determines that: 1) a reduction in water quality will be spatially localized or limited with respect to the waterbody, e.g. confined to the mixing zone; 2) a reduction in water quality is temporally limited; 3) a proposed action will produce minor effects which will not result in a significant reduction of water quality; and 4) a proposed activity has been approved in a General Plan and has been adequately subjected to the environmental and economic analysis required in an EIR. A complete antidegradation analysis is required if discharges would result in: 1) a substantial increase in mass emissions of a constituent; or 2) significant mortality, growth impairment, or reproductive impairment of resident species. Regional Boards are advised to apply stricter scrutiny to non-threshold constituents, i.e., carcinogens and other constituents that are deemed to present a risk of source magnitude at all non-zero concentrations. If a Regional Board cannot find that the above determinations can be reached, a complete analysis is required.

Even a minimal antidegradation analysis would require an examination of: 1) existing applicable water quality standards; 2) ambient conditions in receiving waters compared to standards; 3) incremental changes in constituent loading, both concentration and mass; 4) treatability; 5) best practicable treatment and control (BPTC); 6) comparison of the proposed increased loadings relative to other sources; 7) an assessment of the significance of changes in ambient water quality and 8) whether the waterbody was a ONRW. A minimal antidegradation analysis must also analyze whether: 1) such degradation is consistent with the maximum benefit to the people of the state; 2) the activity is necessary to accommodate important economic or social development in the area; 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved; and 4) resulting water quality is adequate to protect and maintain existing beneficial uses. A BAT or BPTC technology analysis must be done on an individual constituent basis; this Discharger does not provide any treatment of the wastewater discharge. It is not BAT or BPTC for an industrial discharge to provide no treatment to remove or control EC.

Any antidegradation analysis must comport with implementation requirements in State Board Water Quality Order 86-17, State Antidegradation Guidance, APU 90-004 and Region IX Guidance. The conclusory, unsupported, undocumented statements in the Permit are no substitute for a defensible antidegradation analysis.

The antidegradation review process is especially important in the context of waters protected by Tier 2. See EPA, Office of Water Quality Regulations and Standards, *Water Quality Standards Handbook*, 2nd ed. Chapter 4 (2nd ed. Aug. 1994). Whenever a person proposes an activity that may degrade a water protected by Tier 2, the antidegradation regulation requires a state to: (1) determine whether the degradation is "necessary to accommodate important economic or social development in the area in which the waters are located"; (2) consider less-degrading alternatives; (3) ensure that the best available pollution control measures are used to limit degradation; and (4) guarantee that, if water quality is lowered, existing uses will be fully protected. 40 CFR § 131.12(a)(2); EPA, Office of Water Quality Regulations and Standards, *Water Quality Standards Handbook*, 2nd ed. 4-1, 4-7 (2nd ed. Aug. 1994). These activity-specific determinations necessarily require that each activity be considered individually.

For example, the APU 90-004 states:

"Factors that should be considered when determining whether the discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit include: a) past, present, and probably beneficial uses of the water, b) economic and social costs, tangible and intangible, of the proposed discharge compared to benefits. The economic impacts to be considered are those incurred in order to maintain existing water quality. The financial impact analysis should focus on the ability of the facility to pay for the necessary treatment. The ability to pay depends on the facility's source of funds. In addition to demonstrating a financial impact on the publicly – or privately – owned facility, the analysis must show a significant adverse impact on the community. The long-term and short-term socioeconomic impacts of maintaining existing water quality must be considered. Examples of social and economic parameters that could be affected are employment, housing, community services, income, tax revenues and land value. To accurately assess the impact of the proposed project, the projected baseline socioeconomic profile of the affected community without the project should be compared to the projected profile with the project...EPA's Water Quality Standards Handbook (Chapter 5) provides additional guidance in assessing financial and socioeconomic impacts"

There is nothing resembling an economic or socioeconomic analysis in the Permit. In the Water Quality Standards Handbook, USEPA interprets the phrase "necessary to accommodate important economic or social development" with the phrase "substantial and widespread economic and social impact." The Discharger has proposed to eliminate the discharge, however the Discharger and the Regional Board have selected to relax permit limitations and grant mixing zones rather than generate a compliance schedule. The antidegradation analysis must discuss the relative economic burden as an aggregate impact across the entire region using macroeconomics. Considering the intrinsic value of the Delta to the entire state and the potential effects upon those who rely and use Delta waters, it must also evaluate the economic and social impacts to

domestic, municipal, industrial and agricultural water supplies, recreation, fisheries, etc. from the Discharger's degradation of water quality in the Delta. It is unfortunate that the agencies charged with implementing the Clean Water Act and the California water Code have apparently decided it is more important to protect the polluter than the environment.

There is nothing in the Permit resembling an analysis that ensures that existing beneficial uses are protected. While the Permit identifies the constituents that are included on the 303(d) list as impairing receiving waters, it fails to discuss how and to what degree the identified beneficial uses will be additionally impacted by the discharge. Nor does the Permit analyze the incremental and cumulative impact of increased loading of non-impairing pollutants on beneficial uses. In fact, there is no information or discussion on the composition and health of the identified beneficial uses. Any reasonably adequate antidegradation analysis must discuss the affected beneficial uses (i.e., numbers and health of the aquatic ecosystem; extent, composition and viability of agricultural production; people depending upon these waters for water supply; extent of recreational activity; etc.) and the probable effect the discharge will have on these uses.

Alternatively, Tier 1 requires that existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. By definition, any increase in the discharge of impairing pollutants to impaired waterways unreasonably degrades beneficial uses and exceeds applicable water quality standards. Prohibition of additional mass loading of impairing pollutants is a necessary stabilization precursor to any successful effort in bringing an impaired waterbody into compliance.

The State Board has clearly articulated its position on increased mass loading of impairing pollutants. In Order WQ 90-05, the Board directed the San Francisco Regional Board on the appropriate method for establishing mass-based limits that comply with state and federal antidegradation policies. That 1990 order stated "[I]n order to comply with the federal antidegradation policy, the mass loading limits should also be revised, based on mean loading, concurrently with the adoption of revised effluent limits. The [mass] limits should be calculated by multiplying the [previous year's] annual mean effluent concentration by the [four previous year's] annual average flow (Order WQ 90-05, p. 78). USEPA points out, in its 12 November 1999 objection letter to the San Francisco Regional Board concerning Tosco's Avon refinery, that '[a]ny increase in loading of a pollutant to a water body that is impaired because of that pollutant would presumably degrade water quality in violation of the applicable antidegradation policy.'"

The antidegradation analysis in the Permit amendment is not simply deficient, it is literally nonexistent. The single sentence discussion of antidegradation requirements in the Findings is a skeletal, unsupported, undocumented conclusory statement totally lacking in factual analysis. NPDES permits must include any more stringent effluent limitation necessary to implement the



Regional Board Basin Plan (Water Code 13377). The Permit amendment fails to properly implement the Basin Plan's Antidegradation Policy.

**B. The Permit amendment contains Effluent Limitations for electrical conductivity (EC) less stringent than the existing permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1) and 122.62**

The Permit amendment changes the EC Effluent Limitation from 719 umhos/cm as a daily maximum to 850 umhos/cm as a monthly average. The rationale provided that the revision is not backsliding is that the increase in EC is new information (Finding No. 6) that was not available at the time the permit was originally adopted. The increase in EC is due to the Discharger's use of "the Q Street well", which has higher salinity, as a water supply. A Dischargers modification to their facility that produces a lower quality discharge is not new information. Using the Regional Board's rationale; a Discharger could simply stop treating wastewater and the lower quality effluent could be the basis for relaxed limitations. The Discharger does not provide any treatment of the wastewater. The Discharger chose to utilize a higher salinity water supply thus lowering the quality of the wastewater discharge. The Discharger has utilized the city potable supply in the past as an alternative source of water without increasing EC concentrations. The water supply is a "controllable factor" as defined in the Basin Plan, page IV-15.00, *Controllable Factors Policy* which states that: "Controllable water quality factors are not allowed to cause further degradation of water quality in instances where other factors have already resulted in water quality objectives being exceeded. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Water or Regional Water Board, and that may be reasonably controlled." The Sacramento San Joaquin Delta, the receiving stream, frequently exceeds water quality objectives for EC.

The Permit amendment, Finding No. 7, incorrectly states that the discharge of EC does not present a reasonable potential to exceed water quality standards or objectives. Finding No. 7 indicates that a discharge with an EC of 583 umhos/cm does not exceed any water quality standard or objective, and then however an Effluent Limitation is established as a monthly average of 850 umhos/cm. There is no discussion or comparison of the proposed Effluent Limitation for EC to water quality objectives in the Permit amendment.

The proposed Effluent Limitation for EC of 850 umhos/cm exceeds the Basin Plan's Chemical Constituents water Quality objective for EC. The Basin Plan, Page III-3.00 Chemical Constituents, states that "Waters shall not contain constituents in concentrations that adversely affect beneficial uses." The Basin Plan's "Policy for Application of Water Quality Objectives" provides that in implementing narrative water quality objectives, the Regional Board will consider numerical criteria and guidelines developed by other agencies and organizations. This

application of the Basin Plan is consistent with Federal Regulations, 40CFR 122.44(d). For EC, *Ayers R.S. and D.W. Westcott, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)*, levels above 700  $\mu\text{mhos/cm}$  will reduce crop yield for sensitive plants. The University of California, Davis Campus, Agricultural Extension Service, published a paper, dated 7 January 1974, stating that there will not be problems to crops associated with salt if the EC remains below 750  $\mu\text{mhos/cm}$ .

In a *Biological Significance* document, dated November 1<sup>st</sup> 2006, James M. Harrington, Staff Water Quality Biologist with the California Department of Fish and Game (DFG), citing McKee and Wolf (1971 Water Quality Criteria) wrote that: "Surveys of inland fresh waters indicates that good mixes of fish fauna are found where conductivity values range between 150 and 500  $\mu\text{mhos/cm}$ . Even in the most alkaline waters, the upper tolerance limit for aquatic life is approximately 2000  $\mu\text{mhos/cm}$ ." The Permit amendment for an EC Effluent Limitation of 850  $\mu\text{mhos/cm}$  exceeds the level recommended by DFG as necessary to maintain a good mix of fish fauna.

EC and total dissolved solids (TDS) are a measure of salinity. *McKee and Wolf* (1971 Water Quality Criteria) lists the limiting TDS concentrations for numerous industrial uses in  $\text{mg/l}$ , for example; boiler feed water 50-3000, brewing 500-1000, canning 850, general food processing 850 and paper manufacturing 80-500. The Industrial Process beneficial use of the Sacramento River is not discussed in the Permit amendment.

The Permit amendment, Finding No. 7, incorrectly states that the discharge of EC does not present a reasonable potential to exceed water quality standards or objectives. A reasonable potential analysis is not a part of the Permit amendment. Any reasonable potential analysis for EC must comply with Federal regulations, 40 CFR § 122.44(d)(1)(ii), which state "when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, **the variability of the pollutant or pollutant parameter in the effluent**, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water." Emphasis added.

The Permit amendment does not present the maximum concentration of EC measured in the wastewater discharge, but only states (Finding No. 7) that the average EC concentration since the Discharge began use of the Q Street well is 583  $\mu\text{mhos/cm}$ . Finding No. 7 also contains a statement that: "The intermittent use of the new Q Street Well results in short periods of elevated effluent EC, which is expected to have no effect on the overall salinity of the Delta."

The statement is not supported by the presence of numerical data regarding the peak concentrations of EC. The statement does not take into account that salinity is conservative, the mass of EC is additive. Any increase in the mass allowance for the discharge will add to the total mass of EC in the Delta; the statement in the Permit amendment is simply incorrect. This fact should have been fully analyzed in a proper Antidegradation Policy discussion as presented in the above comment.

Under the Clean Water Act (CWA), point source dischargers are required to obtain federal discharge (NPDES) permits and to comply with water quality based effluent limits (WQBELs) in NPDES permits sufficient to make progress toward the achievement of water quality standards or goals. The antibacksliding and antidegradation rules clearly spell out the interest of Congress in achieving the CWA's goal of continued progress toward eliminating all pollutant discharges. Congress clearly chose an overriding environmental interest in clean water through discharge reduction, imposition of technological controls, and adoption of a rule against relaxation of limitations once they are established.

Upon permit reissuance, modification, or renewal, a discharger may seek a relaxation of permit limitations. However, according to the CWA, relaxation of a WQBEL is permissible only if the requirements of the antibacksliding rule are met. The antibacksliding regulations prohibit EPA from reissuing NPDES permits containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions. These regulations also prohibit, with some exceptions, the reissuance of permits originally based on best professional judgment (BPJ) to incorporate the effluent guidelines promulgated under CWA §304(b), which would result in limits less stringent than those in the previous BPJ-based permit. Congress statutorily ratified the general prohibition against backsliding by enacting §§402(o) and 303(d)(4) under the 1987 Amendments to the CWA. The amendments preserve present pollution control levels achieved by dischargers by prohibiting the adoption of less stringent effluent limitations than those already contained in their discharge permits, except in certain narrowly defined circumstances.

When attempting to backslide from WQBELs under either the antidegradation rule or an exception to the antibacksliding rule, relaxed permit limits must not result in a violation of applicable water quality standards. The general prohibition against backsliding found in §402(o)(1) of the Act contains several exceptions. Specifically, under §402(o)(2), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant *if*: (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (ii) the Administrator

determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section; (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy [(e.g., Acts of God)]; (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit, and has properly operated and maintained the facilities, but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Even if a discharger can meet either the requirements of the antidegradation rule under §303(d)(4) or one of the statutory exceptions listed in §402(o)(2), there are still limitations as to how far a permit may be allowed to backslide. Section 402(o)(3) acts as a floor to restrict the extent to which BPJ and water quality-based permit limitations may be relaxed under the antibacksliding rule. Under this subsection, even if EPA allows a permit to backslide from its previous permit requirements, EPA may never allow the reissued permit to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving waters to violate the applicable state water quality standard adopted under the authority of §303.49.

Federal regulations 40 CFR 122.44 (l)(1) have been adopted to implement the antibacksliding requirements of the CWA:

(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under Sec. 122.62.)

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(i) Exceptions--A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if:

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b); (C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy; (D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or (E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification). (ii) Limitations. In no event may a permit with respect to which paragraph (1)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

**C. The Permit amendment allows for a mixing zone that does not comply with the requirements of the Basin Plan or the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) Section 1.4.2.2, which contains extensive requirements for a mixing zone study which must be analyzed before a mixing zone is allowed for a wastewater discharge**

A “completely mixed discharge” is defined by the SIP, Appendix 1-1, when a pollutant concentration is less than 5% different across a transect of the waterbody at a point within two stream/river widths from the point of discharge. The SIP, Section 1.4.2, requires that for incompletely mixed discharges; mixing zones will only be considered following the completion of a mixing zone study by the Discharger. The Permit amendment, page 8 final paragraph, does not find that the discharge is completely mixed within the required distance but instead contains the following statements regarding mixing of the discharge with receiving waters: “For constituents where water quality criteria are based on human health objectives, critical environmental impacts are expected to occur far downstream from the source such that complete mixing is a valid assumption.” The Permit amendment does not present any additional information that the discharge is “completely mixed” as is required by the SIP.

The Permit allows for mixing zones for human health based criteria absent any mixing zone analysis. Based on the facts presented in the Permit amendment; the discharge is not

“completely mixed” as defined in the SIP. In accordance with SIP Section 1.4.2, a mixing zone cannot be granted, including for human health criteria, absent a complete and independent mixing zone study. The dilution credits for human health criteria must be removed from the proposed Order and end-of-pipe limitations based solely on the criteria or standards must be developed.

The proposed mixing zones are based on an assumption, by the permit writer, that the discharge is “completely mixed” as defined by the SIP to avoid extensive mixing zone analyses. The assumption of a completely mixed discharge is invalidated by the fact that the discharge enters the receiving stream via a “shore side diffuser” (Existing Permit Fact Sheet page F-4 II-A) and the “buoyant nature of the thermal plume” (Existing Permit Fact Sheet page F-24). The Basin Plan, page IV-16.00, requires the Regional Board use EPA’s *Technical Support Document for Water Quality Based Toxics Control (TSD)*. The TSD, page 70, defines a first stage of mixing, close to the point of discharge, where complete mixing is determined by the momentum and buoyancy of the discharge. Obviously the wastewater discharge here is not completely mixed in the first stage. The second stage is defined by the TSD where the initial momentum and buoyancy of the discharge are diminished and waste is mixed by ambient turbulence. The TSD goes on to state that in large rivers this second stage mixing may extend for miles. The TSD, Section 4.4, requires that if complete mix does not occur in a short distance mixing zone monitoring and modeling must be undertaken. The Board’s broad unsupported assumption of complete mix is not defensible. The Regional Board has not met the burden of proof that the discharge is well mixed. The extensive SIP, Section 1.4.2.2, requirements for a mixing zone study apply and must be analyzed before a mixing zone is allowed for this discharge. The proposed Effluent Limitations in the Permit are not supported by the scientific investigation required by the SIP and the Basin Plan.

The Basin Plan, Page IV-17.00, allows the Regional Board to grant mixing zones provided that the Discharger has demonstrated that the mixing zone will not adversely impact beneficial uses. The beneficial uses of the receiving stream include municipal and domestic uses. The Permit’s mixing zones allowance does not specify the point of compliance but the mixing zone would apply “far downstream”. The municipal and domestic beneficial uses would be adversely impacted within the mixing zone which extends “far downstream”.

“A mixing zone is an area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient waterbody. A mixing zone is an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented” according to EPA’s *Technical Support Document for Water Quality-based Toxics Control (TSD)* (USEPA, 1991), (Water quality criteria must be met at the edge of a mixing zone.) Mixing zones are regions within public waters adjacent to point source discharges where pollutants are diluted and dispersed at concentrations that routinely exceed human health and

aquatic life water quality standards (the maximum levels of pollutants that can be tolerated without endangering people, aquatic life, and wildlife.) Mixing zone policies allow a discharger's point of compliance with state and federal water quality standards to be moved from the "end of the pipe" to the outer boundaries of a dilution zone. The CWA was adopted to minimize and eventually eliminate the release of pollutants into public waters because fish were dying and people were getting sick. The CWA requires water quality standards (WQS) be met in all waters to prohibit concentrations of pollutants at levels assumed to cause harm. Since WQS criteria are routinely exceeded in mixing zones it is likely that in some locations harm is occurring. The general public is rarely aware that local waters are being degraded within these mixing zones, the location of mixing zones within a waterbody, the nature and quantities of pollutants being diluted, the effects the pollutants might be having on human health or aquatic life, or the uses that may be harmed or eliminated by the discharge. Standing waist deep at a favorite fishing hole, a fisherman has no idea that he is in the middle of a mixing zone for pathogens for a sewage discharger that has not been required to adequately treat their waste.

In 1972, backed by overwhelming public support, Congress overrode President Nixon's veto and passed the Clean Water Act. Under the CWA, states are required to classify surface waters by *uses* – the beneficial purposes provided by the waterbody. For example, a waterbody may be designated as a drinking water source, or for supporting the growth and propagation of aquatic life, or for allowing contact recreation, or as a water source for industrial activities, or all of the above. States must then adopt *criteria* – numeric and narrative limits on pollution, sufficient to protect the uses assigned to the waterbody. *Uses + Criteria = Water Quality Standards (WQS)*. WQS are regulations adopted by each state to protect the waters under their jurisdiction. If a waterbody is classified for more than one use, the applicable WQS are the criteria that would protect the most sensitive use.

All wastewater dischargers to surface waters must apply for and receive a permit to discharge pollutants under the National Pollutant Discharge Elimination System (NPDES.) Every NPDES permit is required to list every pollutant the discharger anticipates will be released, and establish effluent limits for these pollutants to ensure the discharger will achieve WQS. NPDES permits also delineate relevant control measures, waste management procedures, and monitoring and reporting schedules.

It is during the process of assigning effluent limits in NPDES permits that variances such as mixing zones alter the permit limits for pollutants by multiplying the scientifically derived water quality criteria by dilution factors. The question of whether mixing zones are legal has never been argued in federal court.

Mixing zones are never mentioned or sanctioned in the CWA. To the contrary, the CWA appears to speak against such a notion:

“whenever...the discharges of pollutants from a point source...would interfere with the attainment or maintenance of that water quality...which shall assure protection of public health, public water supplies, agricultural and industrial uses, and the protection and

propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water, effluent limitations...shall be established which can reasonably be expected to contribute to the attainment or maintenance of such water quality.”

A plain reading of the above paragraph calls for the application of effluent limitations whenever necessary to assure that *WQS will be met in all waters*. Despite the language of the Clean Water Act; US EPA adopted 40 CFR 131.13, General policies, that allows States to, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances. According to EPA; (EPA, Policy and Guidance on Mixing Zones, 63 Fed Reg. 36,788 (July 7, 1998)) as long as mixing zones do not eliminate beneficial uses in the whole waterbody, they do not violate federal regulation or law. California has mixing zone policies included in individual Water Quality Control Plans (Basin Plans) and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005) permitting pollutants to be diluted before being measured for compliance with the state’s WQS.

Federal Antidegradation regulations at 40 CFR 131.12 require that states protect waters at their present level of quality and that all beneficial uses remain protected. The corresponding State Antidegradation Policy, Resolution 68-16, requires that any degradation of water quality not unreasonably affect present and anticipated beneficial uses. Resolution 68-16 further requires that: “Any activity which produces or may produce or increase volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with the maximum benefit to the people of the State will be maintained.”

- Pollution is defined in the California Water Code as an alteration of water quality to a degree which unreasonably affects beneficial uses. In California, Water Quality Control Plans (Basin Plans) contain water quality standards and objectives which are necessary to protect beneficial uses. The Basin Plan for California’s Central Valley Regional Water Board states that: “According to Section 13050 of the California Water Code, Basin Plans consist of a designation or establishment for the waters within a specified area of beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives. State law also requires that Basin Plans conform to the policies set forth in the Water Code beginning with Section 13000 and any state policy for water quality control. Since beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the state and federal requirements for water quality control (40 CFR 131.20).”
- Nuisance is defined in the California Water Code as anything which is injurious to health, indecent, offensive or an obstruction of the free use of property which affects an entire community and occurs as a result of the treatment or disposal of waste.



The Antidegradation Policy (Resolution 68-16) allows water quality to be lowered as long as beneficial uses are protected (pollution or nuisance will not occur), best practicable treatment and control (BPTC) of the discharge is provided, and the degradation is in the best interest of the people of California. Water quality objectives were developed as the maximum concentration of a pollutant necessary to protect beneficial uses and levels above this concentration would be considered pollution. The Antidegradation Policy does not allow water quality standards and objectives to be exceeded. Mixing zone are regions within public waters adjacent to point source discharges where pollutants are diluted and dispersed at concentrations that routinely exceed water quality standards.

The Antidegradation Policy (Resolution 68-16) requires that best practicable treatment or control (BPTC) of the discharge be provided. Mixing zones have been allowed in lieu of treatment to meet water quality standards at the end-of-the-pipe prior to discharge. To comply with the Antidegradation Policy, the trade of receiving water beneficial uses for lower utility rates must be in the best interest of the people of the state and must also pass the test that the Discharger is providing BPTC. By routinely permitting excessive levels of pollutants to be legally discharged, mixing zones act as an economic disincentive to Dischargers who might otherwise have to design and implement better treatment mechanisms. Although the use of mixing zones may lead to individual, short-term cost savings for the discharger, significant long-term health and economic costs may be placed on the rest of society. An assessment of BPTC, and therefore compliance with the Antidegradation Policy, must assess whether treatment of the wastestream can be accomplished, is feasible, and not simply the additional costs of compliance with water quality standards. A BPTC case can be made for the benefits of prohibiting mixing zones and requiring technologies that provide superior waste treatment and reuse of the wastestream.

EPA's Water Quality Standards Handbook states that: "It is not always necessary to meet all water quality criteria within the discharge pipe to protect the integrity of the waterbody as a whole." The primary mixing area is commonly referred to as the zone of initial dilution, or ZID. Within the ZID acute aquatic life criteria are exceeded. To satisfy the CWA prohibition against the discharge of toxic pollutants in toxic amounts, regulators assume that if the ZID is small, significant numbers of aquatic organisms will not be present in the ZID long enough to encounter acutely toxic conditions. EPA recommends that a ZID not be located in an area populated by non-motile or sessile organisms, which presumably would be unable to leave the primary mixing area in time to avoid serious contamination.

Determining the impacts and risks to an ecosystem from mixing pollutants with receiving waters at levels that exceed WQS is extremely complex. The range of effects pollutants have on different organisms and the influence those organisms have on each other further compromises the ability of regulators to assess or ensure "acceptable" short and long-term impacts from the use of mixing zones. Few if any mixing zones are examined prior to the onset of discharging for the potential effects on impacted biota (as opposed to the physical and chemical fate of pollutants in the water column). Biological modeling is especially challenging – while severely toxic

discharges may produce immediately observable effects, long-term impacts to the ecosystem can be far more difficult to ascertain. The effects of a mixing zone can be insidious; impacts to species diversity and abundance may be impossible to detect until it is too late for reversal or mitigation.

The CALIFORNIA CONSTITUTION, ARTICLE 10, WATER, SEC. 2 states that: "It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water. Riparian rights in a stream or water course attach to, but to no more than so much of the flow thereof as may be required or used consistently with this section, for the purposes for which such lands are, or may be made adaptable, in view of such reasonable and beneficial uses; provided, however, that nothing herein contained shall be construed as depriving any riparian owner of the reasonable use of water of the stream to which the owner's land is riparian under reasonable methods of diversion and use, or as depriving any appropriator of water to which the appropriator is lawfully entitled. This section shall be self-executing, and the Legislature may also enact laws in the furtherance of the policy in this section contained." The granting of a mixing zone is an unreasonable use of water when proper treatment of the wastestream can be accomplished to meet end-of-pipe limitations. Also contrary to the California Constitution, a mixing zone does not serve the beneficial use; to the contrary, beneficial uses are degraded within the mixing zone.

The Central Valley Regional Water Quality Control Board's Basin Plan, page IV-16.00, requires the Regional Board use EPA's *Technical Support Document for Water Quality Based Toxics Control (TSD)* in assessing mixing zones. The TSD, page 70, defines a first stage of mixing, close to the point of discharge, where complete mixing is determined by the momentum and buoyancy of the discharge. The second stage is defined by the TSD where the initial momentum and buoyancy of the discharge are diminished and waste is mixed by ambient turbulence. The TSD goes on to state that in large rivers this second stage mixing may extend for miles. There are drinking water intakes, and proposed intakes, downstream of the wastewater discharge which could be impacted prior to the pollutants from the discharge are completely mixed. The TSD, Section 4.4, requires that if complete mix does not occur in a short distance mixing zone monitoring and modeling must be undertaken.

The State's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (SIP), Section 1.4.2.2, contains requirements for a mixing zone

study which must be analyzed before a mixing zone is allowed for a wastewater discharge. Properly adopted state Policy requirements are not optional. The proposed mixing zone allowance in the Permit amendment are not supported by the scientific investigation that is required by the SIP and the Basin Plan.

SIP Section 1.4.2.2 requires that a mixing zone shall not:

1. Compromise the integrity of the entire waterbody.
2. Cause acutely toxic conditions to aquatic life.
3. Restrict the passage of aquatic life.
4. Adversely impact biologically sensitive habitats.
5. Produce undesirable aquatic life.
6. Result in floating debris.
7. Produce objectionable color, odor, taste or turbidity.
8. Cause objectionable bottom deposits.
9. Cause Nuisance.
10. Dominate the receiving water body or overlap a different mixing zone.
11. Be allowed at or near any drinking water intake.

The Permit's mixing zones have not addressed a single required item of the SIP except in unsupported conclusory statements.

A very clear unaddressed requirement (SIP Section 1.4.2.2) for mixing zones is that the point(s) in the receiving stream where the applicable criteria must be met shall be specified in the Permit. The "edge of the mixing zone" has not been defined.

Few mixing zones are adequately evaluated to determine whether the modeling exercise was in fact relevant or accurate, or monitored over time to assess the impacts of the mixing zone on the aquatic environment. The sampling of receiving waters often consists of analyzing one or two points where the mixing zone boundary is supposed to be – finding no pollution at the mixing zone boundary is often considered proof that mixing has been "successful" when in fact the sampling protocol might have missed the plume altogether.

## **5. THE MANNER IN WHICH THE PETITIONERS ARE AGGRIEVED.**

CSPA is a non-profit, environmental organization that has a direct interest in reducing pollution to the waters of the Central Valley. CSPA's members benefit directly from the waters in the form of recreational hiking, photography, fishing, swimming, hunting, bird watching, boating, consumption of drinking water and scientific investigation. Additionally, these waters are an important resource for recreational and commercial fisheries. Central Valley waterways also provide significant wildlife values important to the mission and purpose of the Petitioners. This wildlife value includes critical nesting and feeding grounds for resident water birds, essential habitat for endangered species and other plants and animals, nursery areas for fish and shellfish

and their aquatic food organisms, and numerous city and county parks and open space areas. CSPA's members reside in communities whose economic prosperity depends, in part, upon the quality of water. CSPA has actively promoted the protection of fisheries and water quality throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore declining aquatic resources. CSPA member's health, interests and pocketbooks are directly harmed by the failure of the Regional Board to develop an effective and legally defensible program addressing discharges to waters of the state and nation.

**6. THE SPECIFIC ACTION BY THE STATE OR REGIONAL BOARD WHICH PETITIONER REQUESTS.**

Petitioners seek an Order by the State Board to:

- A. Vacate Resolution No. R5-2008-0186 (NPDES No. CA0078581) and remand to the Regional Board with instructions prepare and circulate a new tentative order that comports with regulatory requirements.
- B. Alternatively, prepare, circulate and issue a new order that is protective of identified beneficial uses and comports with regulatory requirements.

**7. A STATEMENT OF POINTS AND AUTHORITIES IN SUPPORT OF LEGAL ISSUES RAISED IN THE PETITION.**

CSPA's arguments and points of authority are adequately detailed in the above comments and our 5 December 2008 oral comments to the Regional Board. Should the State Board have additional questions regarding the issues raised in this petition, CSPA will provide additional briefing on any such questions. The petitioners believe that an evidentiary hearing before the State Board will not be necessary to resolve the issues raised in this petition. However, CSPA welcomes the opportunity to present oral argument and respond to any questions the State Board may have regarding this petition.

**8. A STATEMENT THAT THE PETITION HAS BEEN SENT TO THE APPROPRIATE REGIONAL BOARD AND TO THE DISCHARGERS, IF NOT THE PETITIONER.**

A true and correct copy of this petition, without attachment, was sent electronically and by First Class Mail to Ms. Pamela Creedon, Executive Officer, Regional Water Quality Control Board, Central Valley Region, 11020 Sun Center Drive #200, Rancho Cordova, CA 95670-6114. A true and correct copy of this petition, without attachment, was sent to the Discharger in care of: Ms. Linda McMullen, Assistant Chief, California Department of General Services, 707 Third Street,

West Sacramento, CA 95605.

9. **A STATEMENT THAT THE ISSUES RAISED IN THE PETITION WERE PRESENTED TO THE REGIONAL BOARD BEFORE THE REGIONAL BOARD ACTED, OR AN EXPLANATION OF WHY THE PETITIONER COULD NOT RAISE THOSE OBJECTIONS BEFORE THE REGIONAL BOARD.**

CSPA presented the issues addressed in this petition to the Regional Board in verbal comments that were accepted into the record.

If you have any questions regarding this petition, please contact Bill Jennings at (209) 464-5067 or Michael Jackson at (530) 283-1007.

Dated: 2 January 2009

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Bill Jennings", is written over a horizontal line.

Bill Jennings, Executive Director  
California Sportfishing Protection Alliance

Attachment No. 1: Resolution No. R5-2008-0186

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

RESOLUTION NO. R5-2008-XXXX

AMENDING WASTE DISCHARGE REQUIREMENTS  
ORDER NO. R5-2007-0075 (NPDES PERMIT NO. CA0078581)

CALIFORNIA DEPARTMENT OF GENERAL SERVICES, CENTRAL PLANT OPERATIONS  
HEATING AND COOLING FACILITY  
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. On 22 June 2007, the Regional Water Board adopted Waste Discharge Requirements Order No. R5-2007-0075, prescribing waste discharge requirements for the California Department of General Services, Central Plant Operations, Heating and Cooling Facility, Sacramento County. For the purposes of this Resolution, the California Department of General Services is hereafter referred to as "Discharger" and the Central Plant Operations, Heating and Cooling Facility is hereafter referred to as "Facility."
2. The Facility provides heating and cooling to downtown State office buildings and discharges non-contact cooling water from a spray header into the Sacramento River. The sources of cooling water to the Facility are obtained from a Ranney Collector beneath the Sacramento River, Front Street Well, P Street Well, and, on an emergency basis, from the City of Sacramento municipal water distribution system. Since adoption of Order No. R5-2007-0075, an additional well (Q Street Well) has been installed for use on an emergency basis due to the failure of the Ranney Collector. The Ranney Collector has historically supplied most of the single pass, non-contact cooling water to the Facility. The Q Street Well was constructed as part of the Central Plant Renovation to provide supplemental cooling water for the Facility.
3. No chemicals are added to the supply water, which is used in a once-through system to re-condense refrigerant and carry away unwanted heat. There is no treatment of the cooling water at the Facility prior to discharge. Wastewater is discharged to the Sacramento River, a water of the United States, within the Lower Sacramento Watershed.
4. The Discharger plans to cease the river discharge within the term of Order No. R5-2007-0075. The Discharger is currently constructing closed loop mechanical cooling towers with a thermal storage tank. Installation of the cooling towers would result in the elimination of the need to discharge condenser effluent directly to the Sacramento River. Elimination of the discharge to the Sacramento River is planned for 2010.

**Electrical Conductivity Effluent Limitations**

5. Although the discharge did not show reasonable potential to cause or contribute to an instream exceedance of applicable water quality objectives for salinity, performance-based effluent limitations for electrical conductivity (EC) were required as stated in the Fact Sheet (Attachment F) Section IV.C.3.o.v. of Order No. R5-2007-0075:

*"v. **Salinity Effluent Limitations.** Based on the relatively low reported salinity in the effluent, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the discharge is to the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region wide effort to address salinity in the Central Valley and Resolution 68-16, which requires that existing high quality waters be maintained until it has been demonstrated that any change will be consistent with the maximum benefit to the people of the State. Therefore, in accordance with Resolution 68-16, this Order includes a performance-based maximum daily effluent limitation of 719  $\mu\text{mhos/cm}$  for EC to limit the discharge to current levels. It also requires the Discharger to prepare a salinity evaluation and minimization plan."*

Based on the rationale discussed above, Order No. R5-2007-0075 includes Effluent Limitations IV.A.1.a., which reads in part as follows:

- a. *The Discharger shall maintain compliance with the effluent limitations specified in Table 6:*

**Table 6. Effluent Limitations**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Electrical Conductivity	$\mu\text{mhos/cm}$	--	--	719	--	--

6. The Ranney Collector has continued to degrade, with increasingly frequent failures of the individual laterals that comprise the collector; therefore, the Discharger has begun to make greater use of the new Q Street Well. The increased use of the Q Street Well (and diminished use of the Ranney Collector) has resulted in EC effluent limitation exceedances. The Q Street Well produces water with higher EC than the Ranney Collector. When the Q Street Well is used to comprise a substantial portion of the non-contact cooling water, the discharge EC is greater than the historical maximum EC values that were used to calculate the existing performance-based effluent limitation. Consequently, the need for use of the Q Street Well is a change from the conditions known at the time the Order was adopted, and the Discharger, by letter dated 5 September 2008, requested a revision to the performance-based EC effluent limitations to more accurately reflect current operating conditions.
7. Based on recent effluent EC data from the Facility with the use of the new Q Street Well, the discharge does not show reasonable potential to cause and/or contribute to an instream exceedance of applicable water quality objectives for salinity. The average EC concentration since the Discharger began use of the Q Street Well is 583  $\mu\text{mhos/cm}$ , which does not exceed any applicable water quality objectives. However, as discussed in Finding 5, above, effluent limitations for EC are included in the Order due to salinity issues in the Delta. Since the performance of the facility has changed, it is appropriate to modify the performance-based effluent limitations for EC based on recent water quality data that reflects current operating conditions. The intermittent use of the new Q Street Well results in short periods of elevated effluent EC, which is expected to have no effect on the overall salinity of the Delta. Furthermore, the Discharger is nearing

completion of a project to eliminate the discharge to the Sacramento River. Therefore, modifying the performance-based effluent limitations for EC is consistent with State Water Resources Control Board Resolution 68-16 (Antidegradation Policy).

8. Order No. R5-2007-0075 includes a maximum daily effluent limitation for EC. The Discharger requested a longer averaging period (e.g. monthly or annual) for consistency with recent permits adopted by the Regional Water Board. The Regional Water Board finds that a longer averaging period for EC is appropriate for this situation, because intermittent daily spikes in effluent EC would have no effect on the beneficial uses of the receiving water or the overall salinity of the Delta due to the significant amount of dilution available and the intermittent nature of the spikes. Therefore, this Resolution modifies the effluent limitations for EC to reflect current operations and the appropriate averaging period. An average monthly effluent limitation of 850  $\mu\text{mhos/cm}$  has been established based on the statistical projection of the running monthly average effluent EC concentrations from weekly effluent data collected between July 2007 and August 2008.

#### **Whole Effluent Toxicity Requirements**

9. For compliance with the Basin Plan's narrative toxicity objective, Order No. R5-2007-0075 requires the Discharger to conduct chronic whole effluent toxicity testing as specified in the Monitoring and Reporting Program (Attachment E, Section V). Furthermore, the Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the numeric toxicity trigger of  $>1$  chronic toxicity unit (TUc) (where  $\text{TUc} = 100/\text{NOEC}$ ), the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity.
10. Historically, the Facility discharge comprises a maximum of 0.6 percent on the Sacramento River by volume. However, at the time Order No. R5-2007-0075 was adopted, there was insufficient information to allow a dilution credit for compliance with chronic aquatic life criteria. Therefore, the toxicity numeric monitoring trigger was established without the allowance for dilution. A reopener provision was included in the Order to allow the permit to be reopened should the Discharger provide sufficient information to allow a chronic toxicity dilution credit.
11. Quarterly chronic toxicity testing and subsequent accelerated monitoring tests for the discharge indicate potential toxicity detection for *Ceriodaphnia dubia* (water flea) reproduction ( $> 1 \text{ TUc}$ ) from January 2007 to January 2008. In January 2008, the Discharger submitted a Toxicity Reduction Evaluation (TRE) Action Plan/Work Plan that was approved by the Executive Officer. The Work Plan called for a study entitled "Toxicity Reduction Evaluation (TRE) Report: Chronic Aquatic Life Toxicity Mixing Zone Study". This study was identified as the most appropriate toxicity control strategy for the Facility discharge because of (1) the large dilution in the Sacramento River and (2) the cooling water discharge will cease in 2010. This study, submitted in May 2008, evaluated the suitability of a mixing zone based on an aquatic and non-aquatic life



assessment of impacts to beneficial uses and is used to form the technical basis for changes to the chronic whole effluent toxicity numeric monitoring trigger.

12. The Discharger, by letter dated 28 May 2008, requested a revision to the chronic whole effluent toxicity numeric monitoring trigger. This Resolution amends Order No. R5-2007-0075 to allow a dilution credit for chronic aquatic life criteria and revises the chronic whole effluent toxicity numeric monitoring trigger.
13. Sections 402(o)(2) and 303(d)(4) of the Clean Water Act and federal regulations at title 40, Code of Federal Regulations (CFR) section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require a reissued permit to be as stringent as the previous permit, with some exceptions where limitations and/or requirements may be relaxed. The chronic whole effluent toxicity numeric monitoring trigger and the effluent limitation for EC have been relaxed by this Resolution. The data presented in the Discharger's May 2008 study demonstrates the suitability of a mixing zone and supports the change to the chronic whole effluent toxicity numeric monitoring trigger. Furthermore, the installation of the Q Street Well due to failures of the Ranney Collector has resulted in a change in operation of the Facility, requiring a change to the performance-based effluent limitations for EC. The study submitted by the Discharger and the change in Facility operations are considered new information by the Regional Water Board. The increases of the chronic whole effluent toxicity numeric monitoring trigger and EC effluent limitation are consistent with federal anti-backsliding regulations and the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. The impact to water quality will be insignificant.
14. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000, et seq.), in accordance with CWC section 15321 (a)(2), Title 14, of the California Code of Regulations.
15. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to amend waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.
16. Any person adversely affected by this action of the Board may petition the State Water Resources Control Board to review this action. The petition must be received by the State Water Resources Control Board, Office of the Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100, within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.